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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit 3726  
Examiner :  
In re application of : ANTENNA INSTALLATION  
METHODS  
William R. Matz et al. :  
Serial No. [To Be Assigned] :  
Filing Date: December 11, 2001 : Group No. 3700



TRANSMITTAL LETTER ACCOMPANYING DIVISIONAL APPLICATION

Pittsburgh, Pennsylvania 15222

December 11, 2001

Commissioner for Patents  
Washington, DC 20231

Sir:

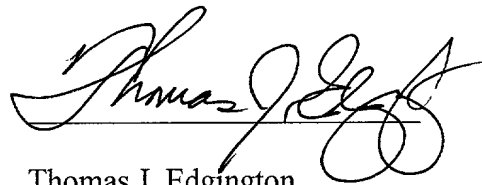
The subject application is a divisional application of U.S. Patent Application Serial No. 09/751,277, filed December 29, 2000 (the "parent application"). The subject application is identical to the parent application as filed except for the changes noted on the enclosed document entitled "Version To Show Changes Made". Namely, Applicant has amended the Title. Applicant has also added a cross-reference to the parent application. Applicant has also amended the Summary of the Invention. The Description has been amended in accordance with the amendments set forth in a Preliminary Amendment dated June 22, 2000 and filed in

connection with the parent application and to correct some in advertent typographical errors.

In addition, Applicant has rewritten original claim 14 as claim 1. Applicant has also added dependent claims 2-15. Original claims 1-13 and 15 have been canceled without disclaimer or prejudice.

Examination of the subject application and passage to allowance of the pending claims at an early date are earnestly solicited.

Respectfully submitted,



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## Version To Show Changes Made

### In the Title

The Title has been rewritten with the following changes:

--ANTENNA INSTALLATION [MONITORING DEVICE AND ANTENNA  
INSTALLATION] METHODS--

### In the Specification

On Page 1, Under "CROSS-REFERENCE TO RELATED APPLICATIONS", the phrase "Not applicable." Has been replaced with:

"This application is a divisional application of U.S. Patent Application Serial No. 09/751,277, filed December 29, 2000."

The paragraph beginning on page 3, line 1 of the parent application has been rewritten as follows:

--Modern digital satellite communication systems typically employ a ground-based transmitter that beams an uplink signal to a satellite positioned in geosynchronous orbit. The satellite relays the signal back to ground-based receivers. Such systems permit the household or business subscribing to the system to receive audio, data and video signals directly from the satellite by means of a relatively small directional receiver antenna. Such antennas are

commonly affixed to the roof or wall of the subscriber's residence or are mounted to a tree or mast located in the subscriber's yard. A typical antenna constructed to [received] receive satellite signals comprises a dish-shaped reflector that has a support arm protruding outward from the front surface of the reflector. The support arm supports a low noise block amplifier with an integrated feed "LNBF". The reflector collects and focuses the satellite signal onto the LNBF which is connected, via cable, to the subscriber's television.--

The paragraph beginning on page 5, line 14 of the parent application has been amended as follows:

--In an effort to improve upon this shortcoming, some satellite antennas have been provided with a light emitting diode ("LED") that operates from feedback signals fed to the antenna by the set top box through the link cable. The LED flashes to inform the installer that the antenna has been properly positioned. It has been noted, however, that the user is often unable to discern small changes in the flash rate of the LED as antenna is positioned. Thus, such approach may result in antenna being positioned in [a] an orientation that results in less than optimum signal quality. Also, this approach only works when the antenna is relative close to its correct position. It cannot be effectively used to initially position the antenna. U.S. Patent No. 5,903,237 discloses a microprocessor-operated antenna pointing aid that purports to solve the problems associated with using an LED indicator to properly orient the antenna.--

The paragraph beginning on page 6, line 14 of the parent application has been amended

as follows:

--In accordance with one form of the present invention, there is provided [a method for aligning an antenna with a satellite, wherein the antenna has a feed/LNBF assembly that is electronically coupled to a set top box which is electronically coupled to a television having a television speaker therein. The method includes operating the set top box and television such that a series of tones are emitted from the television speaker which are indicative of the alignment of the antenna centerline with the satellite and transmitting the series of tones to a speaker located adjacent the antenna. The speaker may be supported on the ground adjacent the antenna or attached to the antenna support arm or mounting bracket.]--

The paragraph beginning on line 22 of page 6 of the parent application has been rewritten as follows:

--[Another embodiment of the present invention comprises] a method of aligning an antenna having a feed/LNBF assembly with a satellite. One version of the [The] method includes electronically coupling a set top box to a television having a television speaker and electronically coupling the feed/LNBF assembly of the antenna to the set top box. Thereafter, the set top box and television are operated such that a series of tones are emitted from the television speaker which are indicative of the alignment of the antenna with the satellite. A speaker is supported adjacent to the antenna and a transmitter is supported adjacent to the television speaker. The transmitter transmits the series of tones emitted by the television speaker to the speaker.--

The paragraph on page 8, line 13 of the parent application has been rewritten as follows:

--Referring now to the drawings for the purposes of illustrating embodiments of the invention only and not for the purposes of limiting the same, Figure 1 illustrates a conventional antenna 10 that is oriented to receive audio and video signals from a satellite 16 in geosynchronous orbit around the earth. The antenna 10 includes parabolic reflector 12 and an arm assembly 14 that includes a forwardly extending portion 16 that supports a feed/LNBF assembly 18 for collecting focused signals from the reflector 12. The antenna reflector 12 is affixed to a conventional mounting bracket 20 that is affixed to a vertically extending mounting mast 22 that is plumb with respect to the horizon. Various methods of installing the mast such that it is plumb are known in the art. Furthermore, such antennas and mounting bracket arrangements are known in the art. As the present Detailed Description proceeds, the skilled artisan will appreciate that the various embodiments of the present invention may be used with a myriad of different antenna configurations and mounting brackets, such as those described in co-pending U.S. Patent Application Serial No. [\_\_\_\_], 09/751,460, filed [\_\_\_\_] December 29, 2000, entitled MOUNTING BRACKET, the disclosure of which is herein incorporated by reference.--

The paragraph beginning at page 10, line 15 of the parent application has been rewritten as follows:

--The present invention is [directed] ~~designed~~ to eliminate the inefficiencies

encountered when employing set top boxes for aligning antenna with a satellite. More particularly, one embodiment of the present invention comprises a speaker 50 and transmitter 60. Speaker 50 and transmitter 60 may comprise those commercially available speakers and transmitters that are often sold as one-way-short range radio infant monitoring devices. To use the speaker 50 and transmitter 60, the installer places the transmitter 60 adjacent to the television's audio speaker 42 such that it can receive and transmit the audio signals emitted during use of the set top box 60 to the speaker 50. The speaker 50 may be placed anywhere adjacent the antenna 10 in order that the installer may hear the audio output therefrom. For example, as shown in Figure 1 the speaker unit 50 may be placed on the ground adjacent the antenna. As shown in Figure 3, the speaker may be removably affixed to the support arm 14. As shown in Figure 3, speaker 50 may be attached to the support arm by a hanger 52. As shown in Figure 4, speaker 50 may be attached to the support arm 14 by a clamp 53. Likewise, speaker may have a magnet 54 affixed thereto to enable it to be magnetically attached to bracket 20 or mast 22. See Figure 5. Those of ordinary skill in the art will appreciate that the magnet should be located and or shielded so as to not interfere with the operation of the compass. In the alternative, the speaker 50 may have hook and loop fasteners 56 for removably affixing the speaker to hook and loop fastener material 24 on the bracket 20 or to hook and loop fasteners 15 on the mast [14] 22. See Figure 6. Those of ordinary skill in the art will appreciate that the speaker may be supported by the antenna 10 in a variety of different manners. In the alternative, the installer may simply carry the speaker 50 on his or her person or attached to a belt, clothing or holster.--

The paragraph beginning at page 11, line 14 of the parent application has been rewritten as follows:

--Regardless of how the speaker positioned or supported adjacent the antenna 10, the installer listens to audio signal emitted by the set top box and transmitted by the transmitter 60 to the speaker 50 and makes the necessary adjustments to the orientation of the antenna reflector 12 until the emitted audio signal indicates that the optimum orientation has been achieved. The antenna 10 is then retained in that position by locking the appropriate adjustment screws on the mounting bracket 20. Also, to make the transmitter 60 easy to locate and thus prevent it from becoming misplaced or lost during installation, it may be provided in a bright color, such a florescent orange, red, yellow, etc.--

#### In the Claims

The claims have been amended as follows:

Claims 1-13 and 15 have been canceled without prejudice or disclaimer.

Claim 14 has been renumbered as claim 1.

Claims 2-15 have been added.

#### In the Abstract

The Abstract has been rewritten as follows:

Methods for aligning a satellite reflector with an antenna that has a feed/LNBF assembly. The feed/LNBF assembly is electronically coupled to a set top box which is electronically coupled to a television that has a television speaker. A transmitter is placed



adjacent the television speaker. The speaker transmits the audio tones emitted by the television speaker which are indicative to the alignment of the antenna with a satellite to a speaker located adjacent to or attached to the antenna or antenna support structures.